

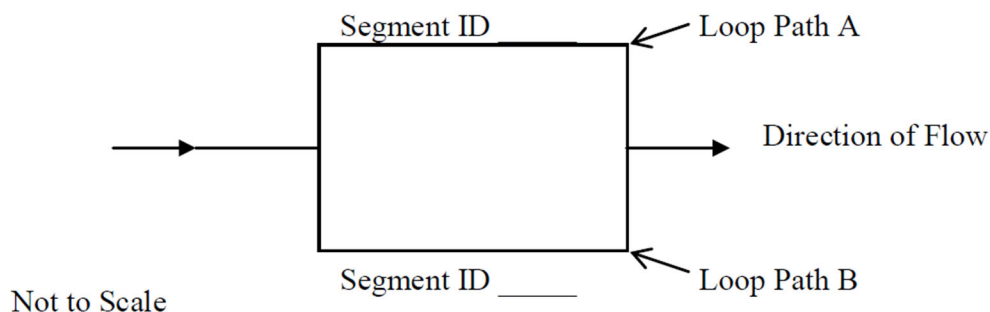


**City Utilities
Design Standards
Manual**

Exhibit W5-6 Friction Losses, Unidirectional Single Loop Worksheet

Version: June 10, 2014

Step 1: Label the Loop



Step 2: List Variables

Loop Path A

Diameter _____

Age: ☐ New or _____ years

C _____

L _____

Loop Path B

☐ New or _____ years

C _____

L _____

Step 3: Converge Loop Path Qs

	Loop Path A	Loop Path B
Trial #1	Q _____	_____
	h_f _____	_____
Trial #2	Q _____	_____
	h_f _____	_____
Trial #3	Q _____	_____
	h_f _____	_____

After each trial, compare h_f values. If not within 1.0 psi or less, reduce the corresponding Q of the higher h_f . Repeat trials until loop path h_f values are within 1.0 psi or less. Then use the higher value.

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